WHAT IS CLAIMED IS:

1. A press, comprising:

a press drive system; and

a differential operatively connected to said drive system.

2. The press as recited in Claim 1, wherein said press drive system comprises:

a press drive motor;

a driveshaft, said driveshaft having a first end and a second end, said first end connected to said press motor;

a pinion, said pinion connected to said second end of said driveshaft;

a main gear, said main gear driven by said pinion; and

a crankshaft, said crankshaft having a first end and a second end, said first end of said crankshaft connected to said main gear.

3. The press as recited in Claim 2, wherein said differential is rotatably supported by said driveshaft.

4. The press as recited in Claim 2, wherein said differential is rotatably supported by said crankshaft.

5. The press as recited in Claim 1, further comprising:

differential movement means for rotating said differential relative to said drive system and thereby increasing or decreasing the output of said differential relative to said drive system.

36. The press as recited in Claim 35, wherein said differential comprises:

an input gear differential, said input gear differential affixed to said main gear, said input gear differential rotatably supported by said crankshaft;

a pinion differential mechanically coupled to said input gear differential;

a shaft, said shaft rotatably supporting said pinion differential;

a gear output differential mechanically coupled to said pinion differential; and

a differential housing.

37. The press as recited in Claim 36, wherein said differential further comprises:

a second pinion differential mechanically coupled to said input gear differential and to said gear output differential; and

a second shaft, said second shaft rotatably supporting said second pinion differential.

38. The press as recited in Claim 35, wherein said differential movement means comprises:

a link spider pivotally connected to said differential housing;

a pivot link, having a first end and a second end, said pivot link pivoting about said second end, said link spider pivotally connected to said pivot link; and

a link main gear, said link main gear pivotally connected to said first end of said pivot link, said link main gear pivoting said pivot link back and forth about said second end.

9. The press as recited in Claim 5, wherein said link main gear is pivotally connected to said main gear.

10. The press as recited in Claim 5, wherein said differential movement means further comprises:

adjustment means for varying the position of said link spider along said link pivot.

11. The press as recited in Claim 10, wherein said adjustment means comprises:

a hydraulic motor;

a pinion link pivot, said pinion link pivot mounted on said hydraulic motor;

a controller for controlling and identifying the position of said link spider;

an encoder for feeding pulses indicative of rotations of said hydraulic motor to said controller;

a gear link pivot driven by said pinion link pivot;

a nut link spider affixed to said gear link pivot;

a screw link spider threadedly connected to said nut link spider, said screw link spider supported on three sides by said pivot link, said nut link spider including pressurized oil to prevent undamped clearance between said screw link spider and said nut link spider;

a pin link spider for pivotally connecting said link spider to said screw link spider; and

a retainer connected to said link pivot, said retainer holding said screw link spider in place within said pivot link.

12. The press as recited in Claim 10, wherein said link spider further comprises:

link spider length adjustment means for varying the length of said link spider.

13. The press as recited in Claim 12, wherein said link spider length adjustment means comprises:

a hydraulic cylinder.

14. The press as recited in Claim 10, wherein said link main gear further comprises:

link main gear length adjustment means for varying the length of said link main gear.

15. The press as recited in Claim 14, wherein said link main gear length adjustment means comprises:

a hydraulic cylinder.

16. The press as recited in Claim 3, wherein said press drive system further comprises:

a motor;

a flywheel driven by said motor;

a clutch, said clutch being selectively engageable with said flywheel;

said driveshaft affixed to said clutch;

a pinion affixed to said driveshaft;

a main gear driven by said pinion; and

said crankshaft affixed to said main gear.

17. The press as recited in Claim 16, further comprising:

a planetary gearing, said planetary gearing mechanically coupled to said clutch; and

a link spider, said link spider pivotally connected to said planetary gearing and to said differential.

18. A press, comprising:

a press drive system;

a differential operatively connected to said drive system; and

differential movement means for rotating said differential relative to said drive system and thereby increasing or decreasing the output of said differential relative to said drive system.

19. A method of varying the slide motion in a running mechanical press, comprising:

connecting a differential to the press drive system; and

utilizing the differential to alternatively add and subtract to the rotational velocity of the press crankshaft relative to the rotational velocity of the press drive system.